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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/818,584 | 03/28/2001 | Narutoshi Fukuzawa | P107424-00024 | 3657 |

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EXAMINER

ANGEBRANNDT, MARTIN J

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| ART UNIT | PAPER NUMBER |
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1756

DATE MAILED: 04/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,584

Applicant(s)

FUKUZAWA, NARUTOSHI

Examiner

Martin J Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2003 and 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The response provided by the applicant has been read and given careful consideration.

The finality of the previous office action is withdrawn and the amendment of 03/17/2003 entered. The arguments of the applicant combined with the amendments obviate the rejections of the previous office action. New rejections relying at least in part upon Yanagimachi et al. JP 10-011799 are presented below. All indications of allowability are withdrawn

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yanagimachi et al. JP 10-011799.

Examples 1, teaches the coating of a phthalocyanine dyes containing recording layer with a silver reflective layer formed by DC magnetron sputtering at 5 mTorr (0.67 Pa) and a power of 5kW, followed by a UV cured protective layer and has a grain size of 52 nm.[0028] The addition of azo or cyanine dyes to the recording layer is disclosed. [0013]. The reduction of the crystal grain diameter is disclosed as desirable, particularly within the range of 30 to 50 nm to achieve high reflectivity with good moisture and heat resistance [0019-0020]. The crystal grain size is reduced as the sputtering power is increased and the gas pressure is reduced [0022]. The

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addition of metals in amounts of 0.1-5% , including In, Rh, Pd, Pt, Ti, Mo, Ta, Zr, Va, W, Cu, Zn, and Ni is disclosed [0022].

The instant specification indicates that reduced gas pressures during sputtering and increased sputtering power yield higher (200)/(111) ratios. The pressure in example 6 in table 1 of the specification is 0.14 Pa higher, but 2 kW lower and has a (200)/(111) of 0.49. In examples 1,2&3 of the table 1 of the specification, the pressure is held constant and the power is increased by 2kW, which yields an increase of 0.04 in the ratio of (200)/(111). Based upon the analysis, the examiner holds that the (200)/(111) is in excess of 0.49. The best guess might be ~0.52-0.54, noting the higher increase when the power is increased between 3 and 4 kW, rather than between 2 and 3 kW.

5. Claims 1,4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagimachi et al. JP 10-011799.

It would have been obvious to add azo or cyanine dyes to the recording layer of the example based upon the disclosure to do so within section [0013].

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '122, in view of Yanagimachi et al. JP 10-011799.

Usami et al. '122 teach optical recording media, which have, grooves of depths of most preferably 150-200 nm, widths of 200-900 nm (0.2-0.9 microns) and a pitch of 0.3 to 0.9 microns. (6/5-18) The use of various dyes including cyanine and azo dyes is disclosed (6/19-34 and examples) The use of silver reflective layers and methods for making them including sputtering and ion plating is disclosed. (7/23-36). The formation of protective layer on these is also disclosed. (7/37-64). Example 2 uses a groove pitch of 0.74 microns, a depth of 150 nm and

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a width at half height of 300 nm, which is coated with a cyanine dye containing recording layer, uses DC magnetron sputtering to produce the silver film and a UV overcoat layer.

The examiner notes that figure 1 of the instant specification shows the groove widths measured at half height.

Usami et al. '122 teach the invention as claimed, except that the properties of the reflective layer and the sputtering conditions are not disclosed. It would have been obvious to one skilled in the art to use the sputtering conditions of Yanagimachi et al. JP 10-011799 when performing the DC magnetron sputtering process forming the silver film in the process of Usami et al. '122 with a reasonable expectation of gaining benefits of high reflectivity and moisture resistance ascribed to the reflective layer by Yanagimachi et al. JP 10-011799.

7. Claims 1,4 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagimachi et al. JP 10-011799, in view of Nee '402.

Nee '402 describes in example 11, sputtering conditions useful as 1000 W at pressures of 1-3 mTorr (0.13-0.39 Pa). Example 1 sputters an AgPd alloy containing 8-10% Pd. The addition of 0.1-15% Pd in an AgPd alloy is disclosed (7/12-20). The combination of AgPdCu is disclosed. (8/15-34)

It would have been obvious to one skilled in the art to modify the example of Yanagimachi et al. JP 10-011799 by using reduced pressures, such as 2-3 mTorr (0.26-0.39 Pa) taught by Nee '402 to further reduce the grain sizes within the preferred range of 30-50 nm [0019] based in part upon the disclosure that reducing the pressure leads to decreased crystal sizes [0022].

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8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '122, in view of Yanagimachi et al. JP 10-011799 and Nee '402.

It would have been obvious to one skilled in the art to modify the combination of Usami et al. '122 and Yanagimachi et al. JP 10-011799 discussed above by using reduced pressures, such as 2-3 mTorr (0.26-0.39 Pa) taught by Nee '402 to further reduce the grain sizes within the preferred range of 30-50 nm [0019] based in part upon the disclosure that reducing the pressure leads to decreased crystal sizes [0022].

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebranndt
Primary Examiner
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April 4, 2003